

THREE NEW TORTRICIDS (LEPIDOPTERA) FROM TEXAS

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Abstract.—Three new species of the family Tortricidae (Lepidoptera), *Pelochrista collilonga*, *Grapholita hieroglyphana*, and *Anopina texasana*, are described from examples collected by the authors in Texas. Male and female imagines and genitalia are figured. A lectotype for *Anopina wellingtoniana* (Kearfott) is designated.

The new tortricid moths described here were collected 13–17 years ago by the senior author and again recently by the junior author, which made the series adequate to entertain description. Examples were studied by Dr. J. F. Gates Clarke at the National Museum of Natural History, where they were found to represent new taxa. Photographs of imagines and genitalia were prepared by the senior author.

Pelochrista collilonga A. Blanchard & E. Knudson, NEW SPECIES

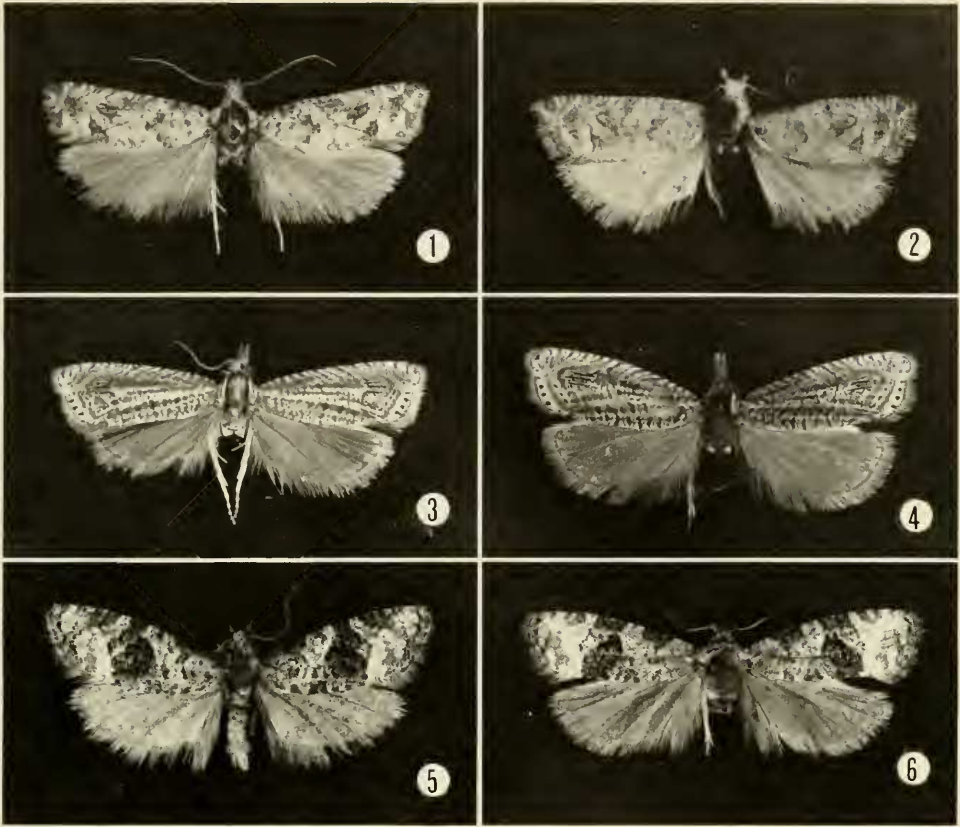
Figs. 1, 2, 7, 8

Head: Front and vertex pale ochreous. Labial palpi pale ochreous, exceeding front by nearly 1 eye diameter. Antennae simple, pale ochreous, with scale rings interrupted on ventral surface by exposed setae. Collar pale ochreous.

Thorax: Tegulae, patagia, and mesonotum pale ochreous.

Forewing: Costal fold extending $\frac{1}{4}$ distance from base to apex. Ground color pale ochreous, variably reticulated with irregular vertical bands of orange brown scales. Sub-basal fascia orange brown, extending from dorsum $\frac{1}{4}$ distance from base, angled outwardly to lower margin of cell, thence angled inwardly toward costa. The costal portion of sub-basal fascia obsolete. Sub-basal fascia is margined outwardly by a few blackish scales. Median fascia consists of an orange brown pre-tornal spot and an orange brown, subrectangular spot, just above and basad of pre-tornal spot, separated from it by ground color. Both of these spots variably margined by blackish scales. Ocelloid area consists of two vertical rows of shining pale ochreous scales, enclosing a few black scales. Above ocelloid area is a fuscous preapical spot. Costa strigulate with pale ochreous and orange brown, the outer 4 pale strigulae geminate. Orange brown apical spot preceded by a pale strigula, which is connected to outer bar of ocelloid area by a band of shiny pale ochreous scales. Fringe consists of 2 scale rows, the inner with pale ochreous scales banded with fuscous near their apices, the outer entirely pale ochreous.

Hindwing: Pale fuscous, fringe slightly lighter.



Figs. 1-6. 1, *Pelochrista collilonga*, holotype ♂, Lake Brownwood State Park, Texas, 21-IV-76. 2, *Pelochrista collilonga*, paratype ♀, Hemphill Co., Texas, Lake Marvin, 2-VII-78. 3, *Grapholita hieroglyphana*, holotype ♂, Guadalupe Mts., Texas, Nickel Creek, 10-VII-68. 4, *Grapholita hieroglyphana*, paratype ♀, Culberson Co., Texas, Sierra Diablo Wildlife Management Area, 14-VII-69. 5, *Anopina texasana*, holotype ♂, Jeff Davis Co., Texas, Mt. Locke, 6700', 26-IV-81. 6, *Anopina texasana*, paratype ♀, Culberson Co., Texas, Sierra Diablo Wildlife Management Area, 16-IX-82.

Length of forewing: Males (N = 6) 4.8-8.7 mm, average 6.7 mm. Females: (N = 3) 6.1-8.2 mm, average 7.2 mm.

Male genitalia (Fig. 7): Valva with extremely elongate and narrow neck between cucullus and sacculus. Cucullus with strong anal seta. Four preparations examined.

Female genitalia (Fig. 8): Ovipositor with well developed papillae anales. Apophyses posteriores $\frac{1}{3}$ the length of apophyses anteriores. Lamella postvaginalis setose, with small medial foramen. Lamella antevaginalis present as sclerotized rim enclosing anterior half of ostium. Ductus bursae with a few sclerotized streaks on posterior surface. Corpus bursae with two large, blunt, thorn-like signa. Two preparations examined.

Holotype (Fig. 1).—♂, Lake Brownwood State Park, Brown Co., Texas, 21-IV-66, genitalia slide A.B. 975, collected by A. & M. E. Blanchard and deposited in the National Museum of Natural History.

Paratypes.—Culberson Co., Texas, Sierra Diablo Wildlife Management Area, 27-VI-81, 3 ♂ (genitalia slides ECK 621, ECK 543), 1 ♀ (genitalia slide ECK 635); 11-VI-82, 1 ♂; Terrel Co., Texas, Sanderson, 28-IX-80, 1 ♂ (genitalia slide ECK 634); Hemphill Co., Texas, Lake Marvin, 2-VII-78, 2 ♀ (genitalia slide ECK 629); all collected by E. Knudson.

Remarks.—This new species has a wing pattern resembling that of *Pelochrista reversana* (Kearfott), but that species lacks the orange tints of *collilonga* and has a more contrasting pattern. The male genitalia of *collilonga* differ from other North American species of *Pelochrista* in the narrow and elongate neck of the valva, approaching *Pelochrista fuscoparsa* (Walsingham) most closely in this character.

***Grapholita hieroglyphana* A. Blanchard & E. Knudson, NEW SPECIES**

Figs. 3, 4, 9, 10

Head: Front and vertex dull ochreous. Labial palpi dull ochreous, dusted with fuscous, exceeding front by $1\frac{1}{2}$ eye diameters; 2nd segment brushlike, obscuring 3rd segment. Antennae dull ochreous, except for terminal 5 or 6 segments, which are blackish brown; scale rings nearly complete, except for exposed finely setose region along ventral surface of flagellum. Collar dull ochreous.

Thorax: Tegulae and patagia ochreous with dull purplish brown median stripe. Mesonotum dull purplish brown with narrow ochreous median stripe.

Forewing: Ground color bright yellow; costa with about 20 dark purplish brown, outwardly oriented strigulae. Basal $\frac{3}{4}$ of wing marked with multiple rows of shining dark purplish brown spots, which form nearly vertical, interrupted lines, some of which join the costal strigulae. These spots also tend to fuse longitudinally, to form horizontal streaks over the cell, and below cell, the latter extending from base to near tornus. Just before tornus, there are 2 purplish brown lines, more or less parallel to termen, which enclose 4 black dots; the outer line extends halfway to costa, the inner line is continuous, outwardly convex and enclosing 4 strong horizontal black dashes between it and the outer margin of cell. Beyond the outer line, just before termen, are 4 or 5 strong black dots. Termen slightly notched below apex. Terminal line dark purplish brown, interrupted at notch by a streak of ground color. Fringe shiny golden yellow at certain angles of light incidence, at other angles, blackish. Undersurface of wing brownish with faint dark inter-venular streaks, mainly beyond cell. Costal strigulae weakly represented.

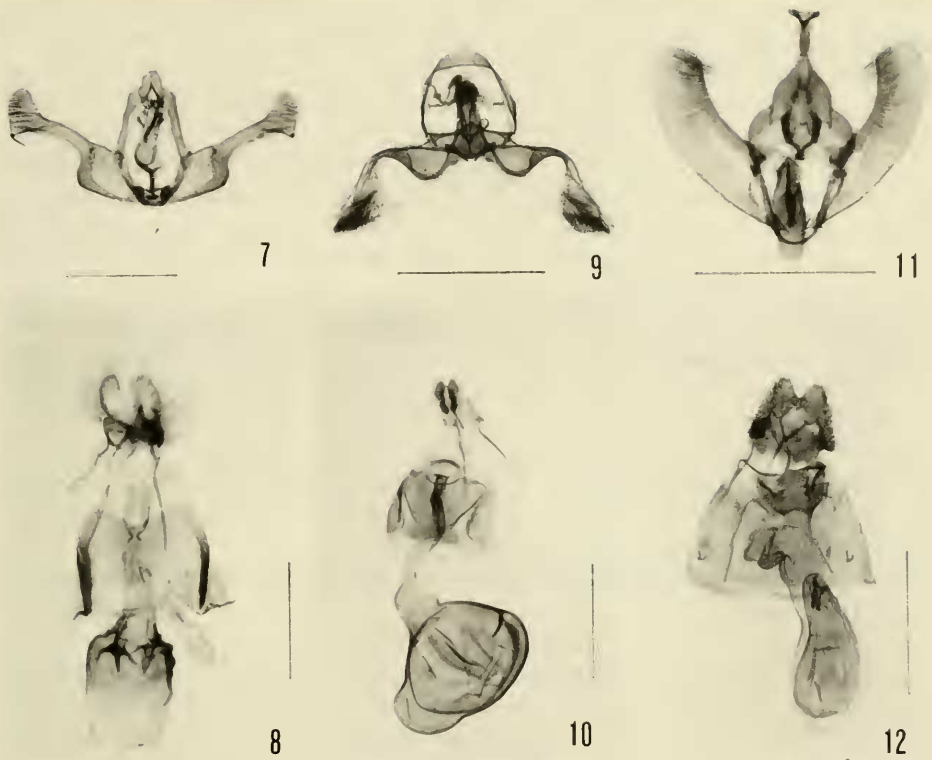
Hindwing: Pale fuscous with a few white spots just before termen. Fringe as in forewing.

Length of forewing: Male: 6.1 mm, females: (N = 2) 6.8–7.4 mm.

Male genitalia (Fig. 9): Apex of tegumen not setose. Valva with pronounced neck incurvation; neck not setose. Apex of cucullus pointed. 1 preparation examined.

Female genitalia (Fig. 10): Apophyses posteriores half as long as apophyses anteriores. Sterigma broad and well sclerotized; lamella antevaginalis scaled. Posterior surface of ductus bursae sclerotized for about $\frac{1}{2}$ its length. Corpus bursae with small microtrichia and a thin thorn-like signum. Two preparations examined.

Holotype (Fig. 3).—♂, Guadalupe Mts., Texas, Nickel Creek, 10-VII-68, genitalia slide AB 1246, collected by A. & M. E. Blanchard and deposited in the National Museum of Natural History.



Figs. 7-12. Genitalia. Line segments represent 1 mm. 7, *Pelochrista collilonga*, holotype ♂, slide AB 975. 8, *Pelochrista collilonga*, paratype ♀, slide ECK 635, Culberson Co., Texas, Sierra Diablo Wildlife Management Area, 27-VI-81. 9, *Grapholita hieroglyphana*, holotype ♂, slide AB 1246. 10, *Grapholita hieroglyphana*, paratype ♀, slide ECK 631, Culberson Co., Texas, Sierra Diablo Wildlife Management Area, 27-VI-81. 11, *Anopina texasana*, paratype ♂, slide ECK 181, same data as holotype. 12, *Anopina texasana*, paratype ♀, slide ECK 626, from specimen in Fig. 6.

Paratypes.—Culberson Co., Texas, Sierra Diablo Wildlife Management Area, 14-VII-69, 1 ♀, genitalia slide AB 4411, collected by A. & M. E. Blanchard; same locality, 27-VI-81, 1 ♀, genitalia slide ECK 631, collected by E. Knudson.

Remarks.—This new species has a distinctive pattern, which should serve to separate it from other North American *Grapholita*. The male genitalia are similar to both *Grapholita molesta* (Busck), and *angleseana* (Kearfott), but in both cases, in *hieroglyphana*, the neck of the valva is narrower and the cucullus more acutely pointed. The female genitalia of *hieroglyphana* is somewhat similar to *Grapholita prunivora* (Walsh) and *packardi* Zeller, but from these it differs in the much longer ductus bursae.

***Anopina texasana* A. Blanchard & E. Knudson, NEW SPECIES**

Figs. 5, 6, 11, 12

Head: Front and vertex pale fuscous, grizzled, composed of whitish scales banded with fuscous. Labial palpi upturned, extending to just above eye, smooth

scaled, whitish obscurely banded with fuscous. Antennae of male prismatic, brown dorso-laterally, finely setose ventrally; in female, simple, sparsely setose ventrally. Collar dark fuscous.

Thorax: Tegulae and patagia whitish, peppered with blackish scales. Mesonotum mostly fuscous anteriorly, whitish posteriorly, with white posterior tuft.

Forewings: Ground color white, strongly marked on costa with three fuscous spots; a trapezoidal spot $\frac{1}{3}$ distance from base, another trapezoidal spot near middle, and a subtriangular pre-apical spot. A large fuscous median dorsal patch extends across cell and joins the median costal spot to form a complete median fascia. This fascia is peppered with jet black scales and bright orange brown scales, mainly over middle. Below basal costal spot, a few small fuscous spots, peppered with black scales, extend towards dorsum, forming an incomplete sub-basal fascia. An elongate fuscous spot extends from near tornus towards pre-apical spot. Remainder of wing white, obscurely marked with fuscous over basal half. Scattered bright orange brown scales variably present over basal half and near apex. 3 to 5 black dots are present along apical half of termen. Fringe composed of white scales banded with fuscous.

Hindwing: Pale fuscous, fringe concolorous.

Length of forewing: Males: (N = 11) 5.8–8.0 mm, average 6.8 mm; female: (1 example) 7.2 mm.

Male genitalia (Fig 11): Uncus spatulate, narrowed at base, slightly dilated apically. Socii digitate, moderately setose, gnathos with acute middle process; fultura superior complete, not setose. Sacculus not produced, with only minute dentations along outer margin. Aedeagus with tip attenuate, caecum not curved; vesica with long straight cornutus. Three preparations examined.

Female genitalia (Fig 12): Apophyses posteriores $\frac{2}{3}$ length of apophyses anteriores. Sterigma with lamella postvaginalis subtriangular, setose; lamella antevaginalis broad, well sclerotized, not setose. Ductus bursae membranous, extremely short; corpus bursae membranous, with diverticulum near junction of ductus bursae, lacking signum. In Fig. 12, ovoid spermatophore lies within corpus bursae.

Holotype (Fig 5).—♂, Jeff Davis Co., Texas, Mt. Locke, 6700', 26-IV-81, collected by E. Knudson and deposited in the National Museum of Natural History.

Paratypes.—Same data as holotype, 6 ♂ (genitalia slides ECK 181 and ECK 728); same locality, 27-V-74, 1 ♂, collected by E. Knudson. Same locality, 6-IX-69, 1 ♂ (genitalia slide AB 2867), collected by A. & M. E. Blanchard. Culberson Co., Texas, Sierra Diablo Wildlife Management Area, 16-IX-82, 1 ♀ (genitalia slide ECK 626); same locality, 11-VI-82, 1 ♂; Brewster Co., Texas, Big Bend Nat. Park, Chisos Basin, 29-III-82, 1 ♂, collected by E. Knudson.

Remarks.—This new species is similar to *Anopina wellingtoniana* (Kearfott), a species which is so far not known from Texas. Dr. Clarke has compared the two species and provided the following comment: "The two species, *A. wellingtoniana* (Kearfott), and *texasana* are similar, but the terminal area of the forewing of the former is largely white with a conspicuous row of black terminal spots; the terminal area of the latter is crossed by a grayish curved fascia and the terminal row of spots is obscure. The male genitalia of *texasana* have a distally truncated uncus, but that of *wellingtoniana* is terminally broadened with a lateral protuberance on each side ventrally. In the female genitalia there is a broadly expanded area anterior to the ostium in *texasana*, which is lacking in *wellingtoniana*." In the course of

his investigation, Dr. Clarke noted that although one specimen of *wellingtoniana* in the NMNH was selected by Obratzov as a *lectotype* in 1956, he could find no publication in which the *lectotype* designation was mentioned. It becomes necessary, therefore, to assign the *lectotype* designation to this specimen.

Anopina wellingtoniana (Kearfott)

Lectotype.— δ , consisting of head, thorax, and left wings and bearing the following data: Wellington, B.C., G. W. Taylor, May; red label: TYPE. collection of W. D. Kearfott; small white label: slide 1274; white handwritten label: *Olethreutes wellingtoniana* Kearf. Cotype; fourth label: male genitalia on slide. C.H. 26 Apr. 1922; green slide label: Genitalia slide by C.H. 1922 USNM 25504; large white label: N. Obratzov select. Dec. 1956. The specimen is in the National Museum of Natural History, Washington, D.C.

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